ARTD 230 / ENG 298 / UOC

User orientated collaborative design

Professor David Weightman,
Tues Thurs 5.00 – 6.20 pm, Room 320, Flagg building

The aim of this course is to introduce you to human centered design practice, as a basis for problem finding and opportunity identification, an invaluable pre-cursor to good innovation development. It is focused on determining people's needs and collaborating with them in developing design solutions which address those needs. It is based on two preceding courses – "User orientated collaborative design "(UOCD) developed at our iFoundry academic partner Olin College – and "Developing design thinking in multi-disciplinary teams" a NCIIA funded course offered at UIUC. This version aims to build on the experience of running those two courses over the last several years. It is operated in a rather different format from most of the courses you have experienced at UIUC and we hope it will be a valuable and transformative experience for you. It remains an experimental learning experience and one which requires your active participation, as well as your continued reflection on your progress and that of the course itself. As well as your collaboration with users and each other, your collaboration with us in the running and future development of the course is essential. Successful participation will require getting involved with the fuzzy front end of design development, where design requirements are often ill defined or ambiguous, where problems can be wicked and design solutions hard to test in familiar quantitative ways. We aim to give you some tools and strategies to navigate this zone of ambiguity.

Design thinking is a term with origins in industrial design practice, rather than the more quantitative realm of engineering design and design science. It describes a human-centered approach to design and innovation in products and services, addressing the tri-partite requirements of feasibility, desirability and viability. This involves considering all aspects of the relationship between people and the products, services and experiences they will make use of, including functional, visual, tactile, social, contextual and emotional aspects. It involves using a variety of thinking processes - with an emphasis on the use of

observation, empathy, ideation and modeling to discover and address opportunities for design propositions, along with the communication of design outcomes by diagrammatic and narrative means. Design thinking also has many applications in the social realm, impacting many areas of human activity. This kind of design activity is best done in teams, hence the project team basis for this course.

Thinkers about design, such as Jane Fulton Suri of IDEO, have characterized the historical development of human-centered design practice as starting with " design for (people), proceeding to design with (people), and aiming towards design by (people)" So our activities on this course are located in the middle of that spectrum, but with intentions of moving beyond designers collaborating with people to designers facilitating peoples own design activities

The course will be centered on design projects carried out in teams comprising no more than six people, ideally from different disciplines. Much of the time will be involved with the actual project work but there will be a series of support lectures covering the nature of innovation; discovering user needs and the use of empathic research methods; ideation, conceptualization and prototyping; communication strategies; teamwork and team building; the nature of multi-disciplinary teams. The outcome will be design concepts and proposals, rather than fully resolved designs but these should be seen in the context of potential implementation and product development

The emphasis of the course is on problem-finding rather than problem solving, as problem framing is an essential part of the design process, but we will be giving you opportunities to exercise your undoubted problem solving skills in the later stages of the semester. This means getting used to a more ambiguous definitions of your design activity than may have been required by your other UIUC courses. You will need to get comfortable with ambiguity!

The course uses " Innovating for people" by the LUMA Institute as the course textbook and each group will be given a photocopy copy of this as we start. Other texts and videos will be suggested as we go along and you are encouraged to read these. The course will use two 90 minute hour time slots with a mixture of group session / lectures on one day and studio workshops. Meetings with CL residents at their facility will need to take place

at various times throughout the week, not always in the class time, so you will need to make particular arrangements for these, This may be a looser pattern of activity than you are accustomed to but I am sure you will adjust quickly. Due to the course timing, if you are prone to late afternoon hunger, I suggest fuelling before we start......

Course outcomes (brackets indicate ABET reqts)

By the end of the course, you should have.....
1/ developed familiarity with the process of determining user needs and determining design opportunities (b, c, f)
2 / developed collaborative design skills by working with people in the development of design solutions which address their needs (c, h, e)
3 / gained experience of a number of research, ideation, prototyping and team-working strategies for collaboration within your project teams (c, d, e)
4 / developed communication skills in presenting research findings and design proposals to others (g)
5/ developed your ability to reflect individually on the processes involved in these design activities (h,i)

Assessment/submission requirements

There will be two assessment events, with grading to reflect the degree to which you have attained the learning outcomes identified above

1/ Production of an **Reflexive design journal / 25%**
This journal is intended to develop your ability to reflect on your experiences on the course. You should aim to produce one page per week as an account of your work within the projects and in your team. You may wish to use it also as a scrapbook to record inspirations and relevant research activities. The journal is intended to be honest and will be confidential to the faculty unless you wish to share it more widely. Photos and links to websites, articles, books etc. are most welcome. The journal will be submitted as a PDF file to the course Dropbox folder. Expression and inventiveness in presentation is positively encouraged. The journal should relate to the three phases of the course

2/ **Collaborative design project / 75%**

In teams of five or six, composition to be determined at the start of the semester, you are to research a user group, define design opportunities for an identified need of that group and work collaboratively with them to produce design proposals. The results of your investigations will be presented to the class in presentations in at least three sessions during the semester. Inventiveness in presentation is encouraged but content is paramount. All team members will receive the same assessment so it is in everyone's interest to collaborate. Instances of irreconcilable breakdown of relationships will be dealt with on a case-by-case basis. You will be asked to comment confidentially on the performance of others in the team in your journals.

Location of sessions

Room 320, Flagg building. Each team will have a workspace in that room with key access, so that you can work in the space at times other than class times. We encourage you to use the space as much as possible. At this point there are no other classes scheduled in that room but other students will have access to use the printers in there. You should bear that in mind when leaving work, tools and personal possessions about. We will have some locker space available in the room to lock things up in. We may sometimes use other rooms for lectures and presentations.

Course material

All lecture PPTs from the course will be available in a Dropbox folder that you will be invited to, along with your presentations. The PPTs will not contain any copyrighted material displayed in class for educational purposes.

Outline of the course

The course is organized in three phases and the outline shows critical dates and the times of lectures and briefings

General outline

We are adopting a slightly different format for the course from last year but still focusing on a particular set of users, people resident at the Clark-Lindsey Retirement community in Urbana. This community has a wide variety of different types of resident, all elderly but

with widely different needs and capabilities, affording many opportunities for collaboration. Some of the residents are retired from the University and have taken part in Make-a-thons organized by Design for America at the University. Clark-Lindsey staff are very keen to be involved again and very excited about the likely outcomes. We will be working closely with the Community Relations Coordinator Laura Beyer and her colleagues and they will explain the particular ethical and confidentiality protocols we will need to follow working with these groups.

There are a number of possible topics that Laura and I have discussed and we will narrow those down based on interest from CL residents in participating in focus groups. CL has four areas of activity - Independent Living, Assisted living, Skilled care and Renewal therapy. We are likely to be working with people in the first two, working with a combination of residents and care staff. In the first two weeks we will establish the composition of our team We will try and get our teams to be broadly composed with a mixture of disciplines, but if there are other students you do not feel comfortable working with you just need to cite "personal reasons" and we will work around that.

Phase 1 Enquiry

To quote from "Innovating for people "

"Innovation begins and ends with people. It calls for keen and caring observation

The disciplined practice of Human-centered design involves careful investigation. It requires curiosity, objectivity and empathy. You need to engage all of your senses (looking, listening and so forth) in pursuit of meaningful findings "

Observation is critical to establishing user needs and is also the first part of building a relationship with users which will be essential in the later stages of the semester. The text describes three methods of looking – Ethnographic research, Participatory research and Evaluative research. We will engage in at least three of these methods and compare results

Phase 2 – Analysis

Again from the text…

"Innovation is not a light bulb moment of genius, It calls for deep understanding and rigorous discernment…..The disciplined practice of HCD involves thoughtful analysis. It requires critical thinking and problem framing. You need to identify patterns, determine priorities and translate your research into actionable insights "

So this phase is about generating the insights which will inform the design phase which follows, using the approaches of people and systems, patterns and priorities and problem framing. This will also involve considering the needs of stakeholders in the process so whilst some of these approaches can be done by the team on its own, others will involve working closely with your user group

Phase 3 – Ideation

And now the part you have been waiting for…you get to design some things which address the needs you have identified. Not just on your own though, as this stage involves working with users in a co-design activity as together you develop, articulate and test your ideas

"Innovation puts great ideas into action. It calls for making things happen in a resourceful and resonant manner. The disciplined practice of HCD involves imaginative, visual expression. It requires a commitment to successive improvement through frequent iteration. You need to think with your hands to bring new ideas to life."

Bringing ideas to life means prototyping on a whole variety of levels. We will concentrate on quick and dirty prototypes where returns are faster and the process more immediate, using sketches and sketch models to do this. At this stage you should be going back to your users with demonstrations of your ideas for their critical feedback and a particularly important feature of this stage is presentation and communication to them as well as the rest of the class. Establishing a narrative or story for your work is a very effective approach at this stage and we will introduce you to a number of ways of doing this

Schedule of sessions *(lectures in italics)*

1 Aug 23 *Introduction to the course*

2 Aug 25 **Group formation exercise**

3 Aug 30 *Clark-Lindsey briefing from Laura Beyer*

4 Sept 1 **Enquiry phase** *Strategies for determining user needs*

5 Sept 6 **Session 1 at Clark-Lindsey**

6 Sept 8 *Working in multi-disciplinary teams*

7 Sept 13 **Session 2 at Clark-Lindsey**

8 Sept 15 *Empathy, ethnography and eliciting information*

9 Sept 20 *Communicating your ideas*

10 Sept 22 **Presentation of results of Enquiry phase**

11 Sept 27 **Session 3 at Clark-Lindsey**

12 Sept 29 **Workshop session**

13 Oct 4 Analysis phase starts *Methods for analysis*

14 Oct 6 Workshop session

16 Oct 11 *Case studies from IDEO*

17 Oct 13 Class cancelled for FAA Arts Exchange

18 Oct 18 Presentation of results from Analysis phase

19 Oct 20 Workshop session

20 Election day Oct 25 (Workshop session)

21 Oct 27 Ideation phase starts */ Ideation techniques*

22 Nov 1 *Modeling and prototyping*

23 Nov 3 *Some innovation case studies*

24 Nov 8 Workshop session / collaboration with CL

25 Nov 10 Initial concept design presentation

26 Nov 15 *Human centered design case studies*

27 Nov 17 Workshop session

Thanksgiving break

28 Nov 29 Concept presentations

29 Dec 1 Workshop session

30 Dec 6 Final presentation of projects to Clark-Lindsey

As we progress, some of these dates may shift !!

Faculty

David Weightman is a Professor of Industrial Design at the School of Art and Design. After obtaining his Master's degree in Industrial design (Engineering) from the Royal College of Art in London, he worked at the Indian Institute of Technology in Delhi, India, then taught on the Industrial Design Transport program at Coventry University. Latterly, he was the Dean of the School of Art and Design at Staffordshire University and a consultant to Yamaha, Massey Ferguson, British Rail, BBC television and the Tate Gallery London. Now in the US, his teaching and research involves exploring the new relationship between product users and the design/ manufacturing process with a focus on the effect of new technology. He was a member of the National Association of Schools of Art and Design working group on the future of design education and recently served as Midwest District Vice President of the Industrial design Society of America. He has recently completed a Residency as an IDEA Studio Scholar at Autodesk LLC in San Francisco

Books

Your team will get a **photocopy** of the first one, but the others you will need to find in the Library or on Amazon and are suggested readings

Innovating for people / Luma Institute

Research methods for Product design / Alex Milton and Paul Rodgers

Drunk Tank Pink / Adam Alter

101 things designers should know about people / Susan Weinschenk

David Weightman / Professor Industrial design / UIUC / July 2015